

CLAIMS

What is claimed is:

1. A temperature control subsystem for use with an air conditioning
5 system, said temperature control subsystem comprising:
a temperature sensor located in proximity to at least one heat-generating device disposed within a housing, said temperature sensor generating data substantially corresponding to the temperature of said at least one heat-generating device;
10 an air-flow control feature coupled with said housing, said air-flow control feature configured to regulate the delivery of cooling air to said housing, said cooling air provided by an air conditioning system;
and a local control subsystem coupled to said air-flow control feature for controlling said air-flow control feature based upon the data received from
15 said temperature sensor such that flow of said cooling air to said housing is adjustable to correspond to said data received from said temperature sensor.
2. The temperature control subsystem of Claim 1, wherein said
20 temperature sensor is located within said housing.
3. The temperature control subsystem of Claim 1, wherein said
temperature sensor is located within said at least one heat-generating device.
4. The temperature control subsystem of Claim 1, wherein said data is
25 received by said local control subsystem via a wired link.
5. The temperature control subsystem of Claim 1, wherein said data is
received by said local control subsystem via a wireless link.
- 30 6. A temperature control system for controlling airflow to a housing containing at least one heat-generating device, said temperature control subsystem comprising:

a temperature sensor thermally coupled with said at least one heat-generating device, said temperature sensor generating data corresponding to the temperature of said at least one heat-generating device;

5 an air-flow control feature configured to regulate flow of cooling air into said housing;

a local control subsystem coupled with said air-flow control feature for controlling said air-flow control feature based upon said data received from said temperature sensor such that said flow of said cooling air to said housing is adjustable to correspond to said data received from said temperature
10 sensor; and

a source of cooling air configured to provide said cooling air to said air-flow control feature.

7. The temperature control system of Claim 6 wherein said temperature
15 sensor is located in proximity to said at least one heat-generating device.

8. The temperature control system of Claim 6 wherein said source of said cooling air comprises a room air conditioning system.

20 9. The temperature control system of Claim 6 wherein said cooling air is directed via a plenum from said source of cooling air into said housing containing said at least one heat-generating device.

10. The temperature control system of Claim 6 wherein said air-flow
25 control feature comprises a vane controlled by an electromechanical actuator.

11. The temperature control system of Claim 6, wherein said data is received by said local control subsystem via a wired link.

30 12. The temperature control system of Claim 6, wherein said data is received by said local control subsystem via a wireless link.

13. A method for controlling the temperature of at least one heat-generating device located in a housing, said method comprising:

determining a temperature proximate to at least one heat-generating device disposed within a housing;

5 providing data corresponding to said temperature to control an air-flow control feature coupled with said housing; and

selectively controlling the flow of cooling air to said housing via said air-flow control feature based upon said data.

10 14. The method as recited in Claim 13 wherein said determining of said temperature comprises determining a temperature within said housing.

15 15. The method as recited in Claim 13 wherein said determining of said temperature comprises determining a temperature of said at least one heat-generating device.

16. The method as recited in Claim 13 wherein said providing said data comprises providing said data corresponding to said temperature via a wired link.

20

17. The method as recited in Claim 13 wherein said providing said data comprises providing said data corresponding to said temperature via a wireless link.

25 18. The method as recited in Claim 13, wherein said providing data corresponding to said temperature to control an air-flow control feature comprises providing a control subsystem adapted to create a control signal for said air-flow control feature based on the difference between said temperature and a reference temperature.

30

19. A system for controlling the temperature of an electronic device comprising:

a duct for conveying heated air away from an electrical device disposed within a housing;

a temperature sensor disposed within said duct for generating data substantially corresponding to the temperature of the heated air;

5 an air-flow control feature disposed within said housing for regulating the amount of the heated air being conveyed away from said electrical device; and

a local control subsystem coupled with said air-flow control feature and with said temperature sensor for controlling said air-flow control feature
10 based upon the data received from said temperature sensor, wherein the amount of the heated air conveyed away from said electrical device is adjusted in response to a control signal generated by said local control subsystem.

15 20. The system of Claim 19, wherein said duct is coupled with said housing.

21. The system of Claim 19, wherein said duct conveys the heated air directly to an air conditioning system.

20

22. The system of Claim 19, wherein said duct prevents the heated air from mixing with the ambient air of a room in which said housing is disposed.

23. The system of Claim 22 further comprising:

25 a second temperature sensor disposed in said room for generating data substantially corresponding to the temperature of said room.

24. The system of Claim 22, wherein said local control subsystem determines a value corresponding to the difference between the data
30 generated by said temperature sensor and said second sensor.

25. The system of Claim 24, wherein said control signal is generated in response to said value.

26. The system of Claim 19, wherein said data and said control signal are conveyed to said local control subsystem via a wired link.

5 27. The system of Claim 19, wherein said data and said control signal are conveyed to said local control subsystem via a wireless link.

28. A method for controlling the temperature of and electrical device comprising:

10 coupling a duct for conveying air with a housing for an electrical device;

generating data substantially corresponding to the temperature of heated air being conveyed from said housing using a temperature sensor disposed within said duct;

15 generating a control signal to an air-flow control feature disposed within said duct in response to receiving the data; and

regulating the flow of the heated air out of said housing using said air-flow control feature.

20 29. The method as recited in Claim 28 further comprising:

generating data substantially corresponding to the temperature of a room in which said housing is disposed using a second temperature sensor.

30. The method as recited in Claim 29, wherein said generating said control signal comprises comparing the data from said temperature sensor with the data from said second temperature sensor.

31. The method as recited in Claim 29 further comprising:

30 conveying the heated air out of said room to an air conditioning system.

32. The method as recited in Claim 31, wherein said heated air does not mix with the ambient air of said room.

33. The method as recited in Claim 28 further comprising:
communicatively coupling said temperature sensor and said air-flow
control feature with a local control subsystem for generating said control
5 signal.

34. The method as recited in Claim 33, wherein said temperature sensor
and said air-flow control feature are communicatively coupled with said local
control subsystem using a wired link.

10 35. The method as recited in Claim 33, wherein said temperature sensor
and said air-flow control feature are communicatively coupled with said local
control subsystem using a wireless link.